
JO DAVIESS
STEPHENSON
WINNEBAGO
BOONE
MC HENRY
LAKE
70
CARROLL
OGLE
DE KALB
KANE
COOK
WHITESIDE
LEE
DU PAGE
WILL
LA SALLE
BUREAU
KENDALL
GRUNDY
ROCK ISLAND
MERCER
HENRY
PUTNAM
KANKAKEE
KNOX
STARK
MARSHALL
LIVINGSTON
WARREN
PEORIA
IROQUOIS
WOODFORD
HENDERSON
MC LEAN
FULTON
HANCOCK
MC DONOUGH
FORD
TAZEWELL
VERMILION
MASON
CHAMPAIGN
SCHUYLER
LOGAN
DEWITT
ADAMS
BROWN
CASS
MENARD
PIATT
MACON
PIKE
MORGAN
DOUGLAS
EDGAR
SCOTT
MOULTRIE
CHRISTIAN
SHELBY
COLES
SANGAMON
GREENE
MACOUPIN
CLARK
CALHOUN
MONTGOMERY
CUMBERLAND
JERSEY
FAYETTE
EFFINGHAM
JASPER
CRAWFORD
MADISON
BOND
RICHLAND
LAWRENCE
MARION
CLINTON
CLAY
WAYNE
EDWARDS
WABASH
WASHINGTON
JEFFERSON
MONROE
ST. CLAIR
HAMILTON
WHITE
RANDOLPH
PERRY
FRANKLIN
JACKSON
SALINE
GALLATIN
WILLIAMSON
UNION
JOHNSON
POPE
HARDIN
ALEXANDER
PULASKI
MASSAC

FREEPORT BYPASS EAST **ISGS #70**
POTENTIAL WETLAND COMPENSATION SITE 4E
FAP 301
Stephenson County, near Freeport, Illinois
Primary Project Manager: Kelli D. Weaver
Secondary Project Manager: not assigned

SITE HISTORY

- January 2003: ISGS was tasked by IDOT to monitor wetland hydrology at this site.

- March 2003: ISGS installed 9 soil-zone monitoring wells, a staff gauge and an Ecotone data logger. Locations of monitoring wells and the data logger were determined with a GPS unit by ISGS, and a topographic survey of the site was conducted by IDOT during well installation.

- May 2003: ISGS was tasked by IDOT to perform a Level II hydrogeologic assessment of the potential wetland mitigation site.

- April 2004: ISGS installed one deep well, and an additional soil-zone monitoring well to further delineate wetland hydrology and site geology.

- January 2004: IDOT requested monitoring at Sites 8E and 10E be discontinued.

WETLAND HYDROLOGY CALCULATION FOR 2004

We estimate that the total area that satisfied the criteria (U.S. Army Corps of Engineers 1987) for greater than 5% of the growing season was 0.92 ac (0.37 ha). In addition, the area that satisfied wetland hydrology criteria for greater than 12.5% of the growing season in 2004 was 0.76 ac (0.31 ha). The site, as defined by a boundary line drawn on an IDOT air photo, is 22.0 ac (8.9 ha) in size. These estimates are based on the following factors.

- According to the Midwestern Climate Center, the median date that the growing season begins in Freeport, Illinois, is April 13 and the season lasts 183 days; 5% of the growing season is 9 days, 12.5% of the growing season is 23 days.

- Total precipitation for the monitoring period of September 2003 to August 2004 was 116% of normal. Despite drier than normal conditions for the months of September and October 2003, and January, February and April 2004, the near- to above-normal precipitation in November and December 2003, and March, and May through August 2004, led to wetter than typical conditions during the 2004 growing season.

- Although no other wells satisfied wetland hydrology criteria for greater than 5% of the growing season in 2004, water levels measured in well 1S did satisfy wetland hydrology criteria for greater than 12.5% of the growing season.

- Water levels measured by logger RDS 3S indicated that inundation or saturation occurred to an elevation of 233.68 m (766.67 ft) for a duration longer than 5% of the growing season. Inundation or saturation also occurred to an elevation of 233.67 m (766.63 ft) for a period greater than 12.5% of the growing season. No surface-water flooding from the central ditch

was recorded.

- Limitations of the wetland hydrology determination are as follows:
  - The area of wetland hydrology was measured planimetrically using a digitally produced topographic contour map with 0.30 m (1 ft) intervals provided by IDOT District 2. The acreage polygons generated from the topographic map were then superimposed upon the digital topographic map used for the figure in this report.
  - Positions of instruments determined via GPS were plotted at the same approximate scale as the base map and were overlain on the digital orthophotograph.

PLANNED FUTURE ACTIVITIES

- Additional shallow-water monitoring wells may be added to better delineate wetland hydrology.
- A Level II hydrogeological characterization report is in preparation.
- Monitoring is expected to continue until no longer required by IDOT.

Freeport Bypass East Wetland Compensation Site 4E
(FAP 301)

General Study Area and Vicinity

from the USGS Topographic Series, Freeport East, Il 7.5 minute Quadrangle (USGS 1999)
contour interval is 10 feet.

Freeport Bypass East Wetland Compensation Site 4E
(FAS 301)

Estimated Areal Extent of 2004 Wetland Hydrology

based on data collected between September 1, 2003 and September 1, 2004
map based on USGS DOQ, Freeport East NW Quadrangle (1998-1999)

- ISGS monitoring well
- RDS data logger
- stage gauge
- ISGS benchmark
- Global pressure transducer

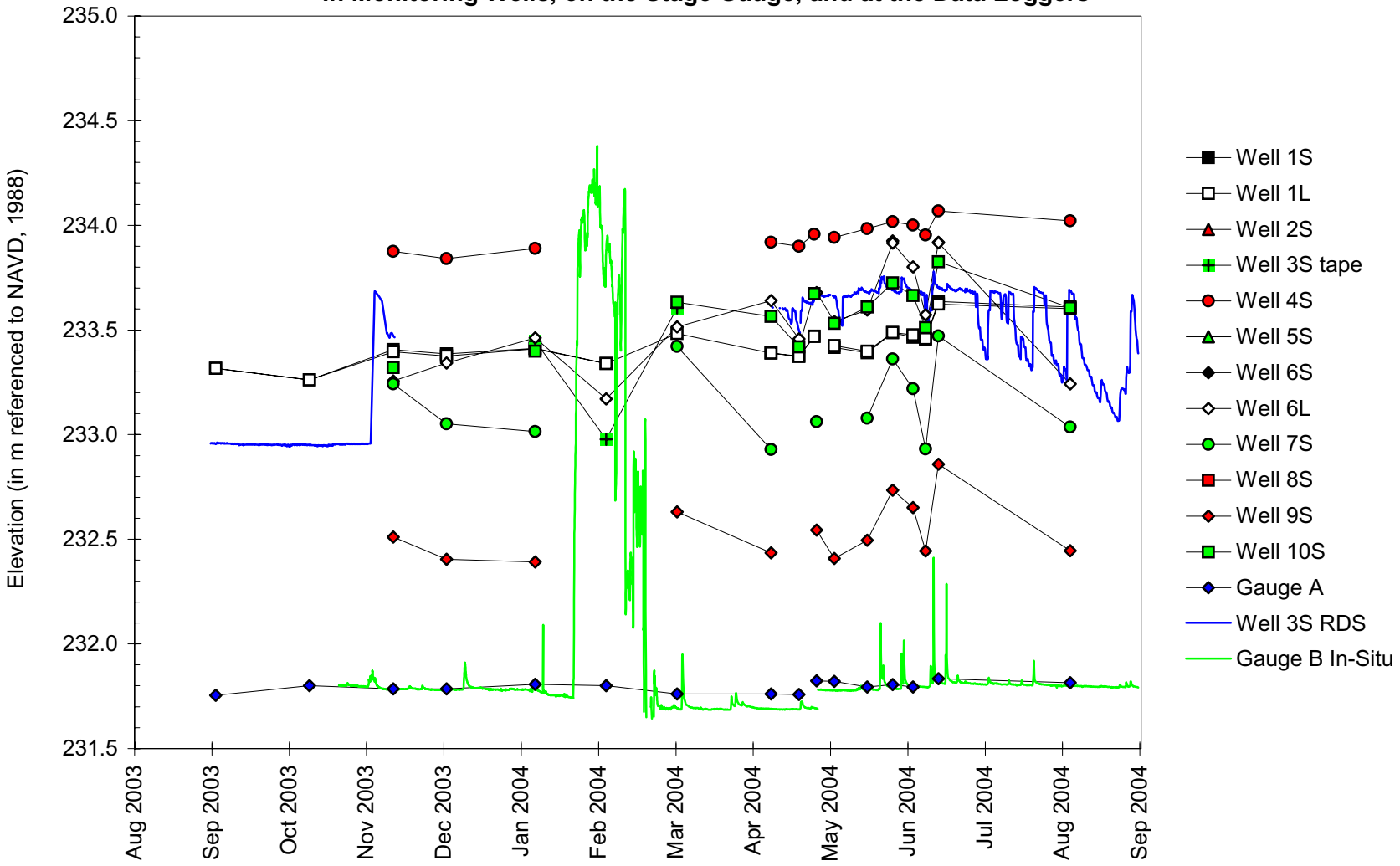
2004 Wetland Hydrology

- > 12.5% of the growing season
- > 5% of the growing season
- estimated areal extent of site boundary

Freeport Bypass East Potential Wetland Compensation Site 4E

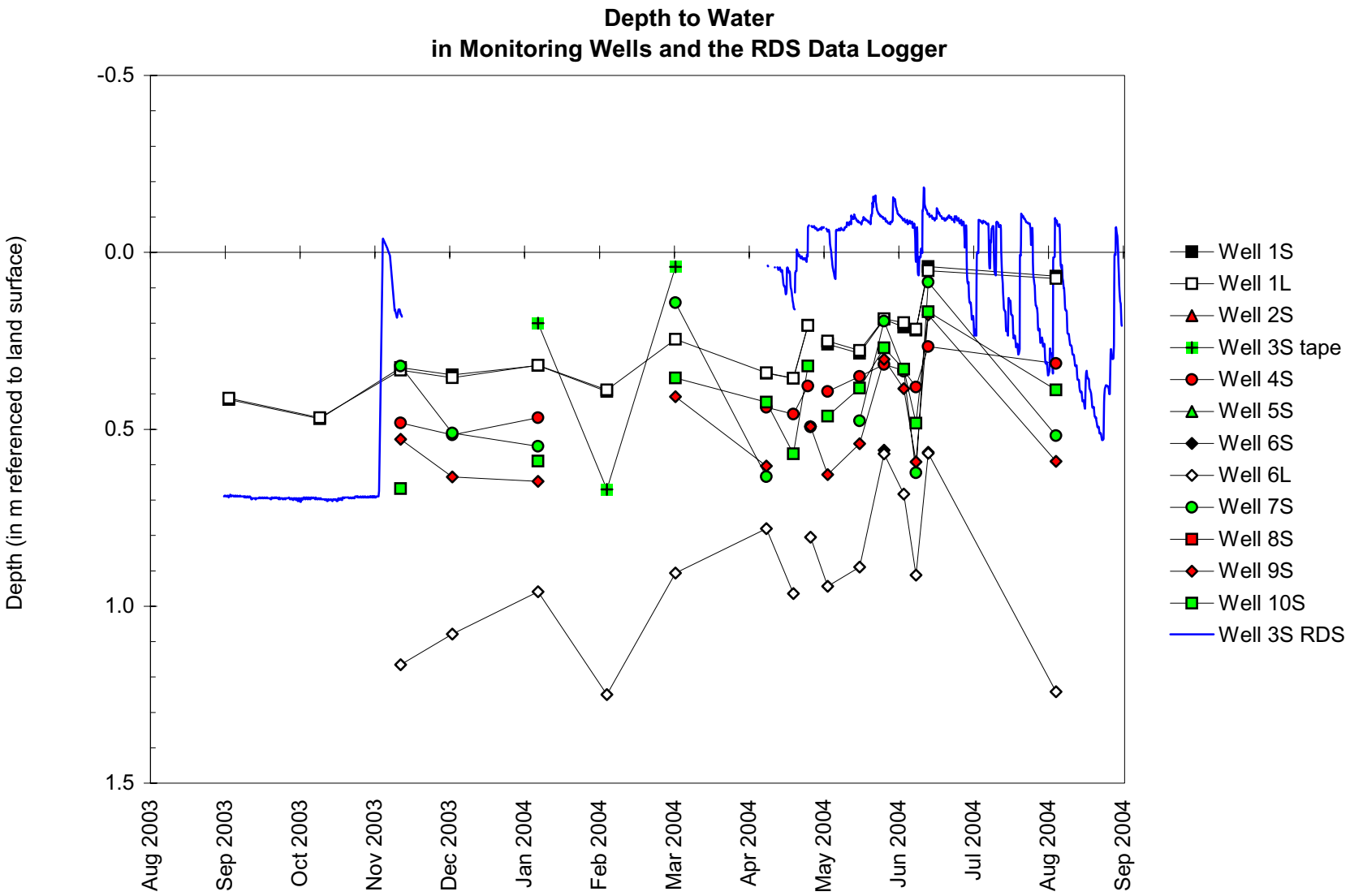
September 1, 2003 to September 1, 2004

Water-Level Elevations
in Monitoring Wells, on the Stage Gauge, and at the Data Loggers



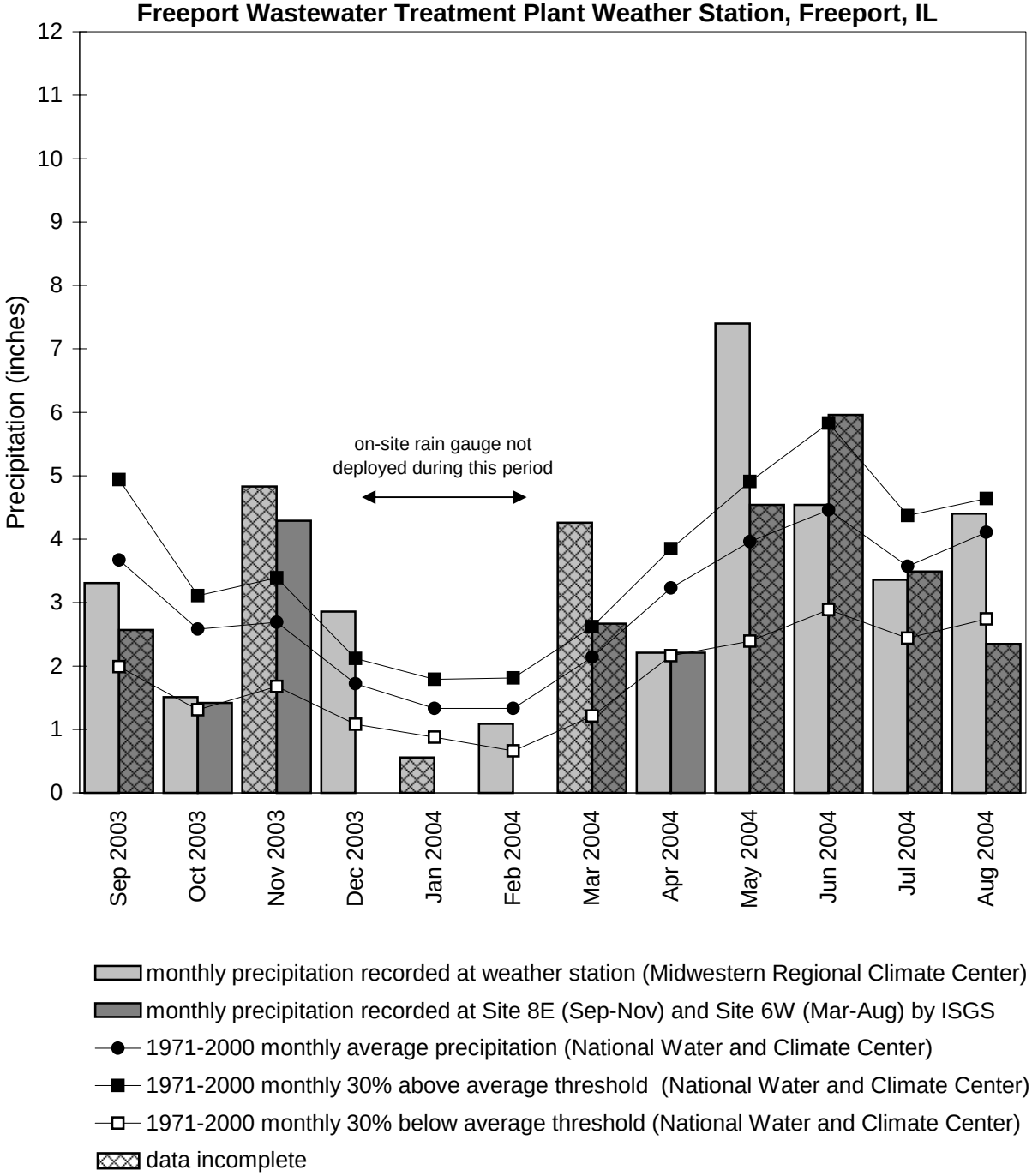
Freeport Bypass East Potential Wetland Compensation Site 4E

September 1, 2003 to September 1, 2004



Freeport Bypass East
Potential Wetland Compensation Site 4E
September 2003 through August 2004

Total Monthly Precipitation Recorded At Site 8E and 6W and at the Freeport Wastewater Treatment Plant Weather Station, Freeport, IL



Graph last updated October 1, 2004